

CLAIMS

1. A protein, except as existing in nature, comprising the amino acid sequence consisting functionally of SEQ ID NO:1.
- 5 2. The protein of claim 1, wherein said amino acid sequence consists essentially of the amino acid sequence of SEQ ID NO:1.
3. An antibody made by a process comprising the step of injecting a pharmaceutically acceptable preparation comprising the protein of either claim 1 or claim 2 into an animal capable of producing said antibody.
- 10 4. The process of claim 3, wherein said animal is a mouse and said process further comprises fusing spleen cells from said mouse with myeloma cells to produce a monoclonal antibody binding to said protein.
5. An antibody that binds preferentially to the protein of claim 2.
6. A polynucleotide, except as existing in nature, encoding a protein comprising the amino
15 acid sequence consisting functionally of the sequence of SEQ ID NO:1.
7. The polynucleotide of claim 6, wherein said polynucleotide encodes a protein consisting essentially of the amino acid sequence of SEQ ID NO:1.
8. An expression vector comprising the polynucleotide of either claim 6 or claim 7.
9. A host cell transformed with the vector of claim 8.
- 20 10. Recombinant B1C3 receptor produced by the host cell of claim 9.
11. The polynucleotide of claim 7, wherein said polynucleotide has a sequence consisting essentially of the nucleotide sequence of SEQ ID NO:2.
12. An expression vector comprising the polynucleotide of claim 11.
13. A host cell transformed with the vector of claim 12.

14. A method of assaying a test compound for its ability to bind to the B1C3 receptor, comprising:

a) incubating a source containing said B1C3 receptor with:

i) a ligand known to bind to said B1C3 receptor;

5 ii) said test compound; and

b) determining the extent to which said ligand binding is displaced by said test compound.

15. The method of claim 14, wherein said B1C3 receptor has the sequence shown in SEQ ID NO:1.

10 16. A method for determining if a test compound is an agonist of a B1C3 receptor, comprising:

a) incubating a cell expressing said B1C3 receptor with said test compound; and

b) determining whether said test compound causes a statistically significant increase in either intracellular adenylyl cyclase activity or the intracellular
15 concentration of calcium.

17. The method of claim 16, wherein said B1C3 receptor has the sequence shown in SEQ ID NO:1.

18. A method for determining if a test compound is a ligand or agonist of a B1C3 receptor, comprising determining whether a cell expressing said receptor internalizes it in response to contact with said test compound.
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19. The method of claim 18, wherein:

a) said B1C3 receptor is recombinantly expressed in said cell as a fusion protein linked to a fluorescent protein;

b) the cell of step (a) is contacted with said test compound; and

25 c) internalization of receptor is determined by microscopy.

20. A method for determining if a test compound is an antagonist of an B1C3 receptor, comprising:

- a) incorporating a DNA molecule encoding said B1C3 receptor into an expression vector so that it is operably linked to a promoter;
- b) transfecting said expression vector into a host;
- c) selecting cells transfected in step b) that have constitutively activated B1C3
5 receptors as evidenced by either:

- i) a statistically significant increase in intracellular adenylyl cyclase activity; or
- ii) a statistically significant increase in intracellular calcium concentration;

- 10 d) contacting the cells selected in step c) with said test compound; and
- e) determining if said test compound causes a statistically significant decrease in either said adenylyl cyclase activity or said calcium concentration relative to control cells not contacted with said test compound.

15 21. The method of claim 20, wherein said B1C3 receptor has the sequence shown in SEQ ID NO:1.

22. A method for assaying a test compound for its ability to alter the activity of an B1C3 receptor, comprising:

- a) incubating a source containing said B1C3 receptor with:
 - i) a ligand that binds with specificity to said B1C3 receptor;
 - 20 ii) said test compound; and
- b) determining whether said test compound increases or decreases intracellular calcium concentration in response to said ligand.

23. The method of claim 22, wherein said B1C3 receptor has the sequence shown in SEQ ID NO:1.

- 25 24. A method for assaying a test compound for its ability to alter the expression of a B1C3 receptor, comprising:
 - a) growing cells expressing said MP-10 receptor;
 - b) collecting said cells; and

c) comparing receptor expression in the cells exposed to said test compound with control cells grown under essentially identical conditions but not exposed to said test compound.

5 25. The method of claim 24, wherein said cells expressing said B1C3 receptor are cells transformed with an expression vector comprising a polynucleotide sequence encoding a protein with an amino acid sequence consisting essentially of the sequence shown in SEQ ID NO:1.

10 26. The method of any one of claims 24 or 25, wherein said test compound is an oligonucleotide at least 15 nucleotides in length and comprising a sequence complementary to the sequence of said B1C3 receptor.